

REMARKS

Summary of the Office Action

Claims 1-32 were pending in this application.

The Examiner objected to the specification as containing informalities because of the use of the term "packet." Specifically, the Examiner contends that applicants have improperly used the term packet.

The Examiner rejected claims 1-32 under 35 U.S.C. § 103(a) as being obvious in view of Kato U.S. Patent No. 5,844,918 (hereinafter "Kato").

Summary of Applicants' Reply

Applicants have amended claims 1, 2, 6, 11, 14, 17, 18, 22, 27, and 30 to more particularly define applicants' claims. No new subject matter has been added and the amendments are fully supported by the original specification.

The Examiner's rejections are respectfully traversed.

Applicants' Reply to Objections to the Specification

The Examiner contends that "Applicant's use of the term 'packet' implies that each block of bits so called in independently routable, however all of applicant's 'packets' are apparently not independently routable." This objection is respectfully traversed.

According to Merriam-Webster's Collegiate Dictionary (Tenth Edition), the word "packet" is defined as "a short fixed-length section of data that is transmitted as a unit in an electronic communications network." Thus, it can be seen that the term packet does not imply anything about routability. Therefore, there is no basis for the Examiner's objection and this objection should be withdrawn.

Applicants' Reply to the
35 U.S.C. § 103(a) Rejections

Applicants' amended independent claim 1 is directed toward circuitry for maintaining data integrity across data links. An encoding circuit divides a data frame into a plurality of data sub-packets and a plurality of sequential identification packets are inserted in between the plurality of data sub-packets. A transmitter circuit transmits the data sub-packets with the inserted plurality of sequential identification packets and a receiver receives a sub-plurality of these packets. A decoding circuit identifies each of the received sequential identification packets and stores the received data sub-packets in the sequence of the data frame in response to identifying the received sequential identification packets. The stored data also includes data positions for a sub-plurality of data packets that were not received by the receiver circuit. The sub-plurality of data packets not received by the receiver circuit are recovered using the stored data packets.

For example, as described in applicants' specification, an FEC data frame is broken up into data sub-packets and each data sub-packet is preceded by an IDLE/SYNC packet. After a data loss, the IDLE/SYNC packets may be used by a data receiver to determine the position of the received data within the data frame. The received portions of data are stored in these positions within the data frame and the lost portions may be recovered based on the received data.

Kato refers to a digital transmission system that takes basic data, appends a BCH-based parity code and divides the data into smaller packets. An error detecting code is appended to each of the divided

packets. If an error is detected in any of the divided packets, a request for retransmission is sent.

However, as admitted by the Examiner, Kato does not teach that the packet header appended to the divided packets are sequential or that they are used for identification of the packets. Instead, the packet headers of Kato are merely contain a CRC code (i.e., an error detecting code) that is used to detect errors in the packet. If an error is detected using the CRC code, an ARQ protocol is used to request retransmission of the corrupted packet.

Therefore, because each packet is retransmitted whenever there is an error, Kato does not show or suggest "storing each of said received data sub-packets . . . in the sequence of said data frame . . . wherein the stored data includes data positions representing the sub-plurality of data packets not received by the receiver circuit " and "recovering the sub-plurality of data packets not received using the stored data sub-packets." In contrast to the system of applicants' amended independent claim 1, in which the entire data frame can be decoded from a sub-plurality of received packets stored in their proper, the system of Kato relies upon retransmission of erroneous packets to obtain a complete data. Furthermore, because Kato does not attempt to piece together only a sub-plurality of packets, there is no reason for Kato to use identification packets to store the received data in a sequence, as recited by applicants' claims.

For at least these reasons, applicants respectfully request that the rejection of amended independent claim 1 under 35 U.S.C. § 103(a) be withdrawn.

Applicants respectfully request that the rejection of amended independent claims 6, 11, 14, 17, 22, 27, and 30 under 35 U.S.C. § 103(a) be withdrawn for at least the same reasons as amended independent claim 1.

Claims 2-5, 7-10, 12, 13, 15, 16, 18-21, 23-26, 28, 29, 31, and 32 depend, directly or indirectly from amended independent claims 1, 6, 17, 22, and 27, respectively. For at least this reasons, applicants respectfully request that the rejection of claims 2-5, 7-10, 12, 13, 15, 16, 18-21, 23-26, 28, 29, 31, and 32 under 35 U.S.C. § 103(a) be withdrawn.

Applicants' Reply to the
Examiner's Official Notices

The Examiner acknowledged that Kato fails to show various features of applicants claims. These features include: a) " packet headers that provide 'identification' of the position of the packet in a sequence of packets " b) "counting time or counting the amount of data while receiving the packets", c) Reed-Solomon coding, d) "interleaving FEC-encoded data among data packets, e) "encoding a clock signal within the data to be transmitted or deriving a clock signal from the transmitted data", and f) "manipulating data as bytes or words before or after serial transmission, thus requiring a "serializer" and a "de-serializer."" For all of these features the Examiner has taken Official Notice that each of these features were "well-known at the time the invention was made." Applicants respectfully traverse the Examiner's Official Notices.

The Examiner may only take Official Notice of facts outside of the record which are "capable of such instant and unquestionable demonstration as to defy dispute" (MPEP § 2144.03(A)). Applicants submit that

there is no objective basis to conclude that these concept were well known beyond dispute as of applicants' date of invention. Therefore, applicants traverse the Official Notices because it is at least disputable whether the noticed concept was well-known at the time of applicants' invention. If the Examiner maintains the rejection, applicants respectfully request that the Examiner provide references in support of the Official Notices (see MPEP § 2144.03(C)).

Second, even assuming, arguendo, that it could be established that these features of applicants claims "well-known at the time the invention was made," applicants respectfully submit that there would be no motivation for one of ordinary skill in the art to combine such teachings with the disclosure of Kato. "The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." MPEP § 2143.01(III). Instead of providing motivation for combining Kato with each of these features, the Examiner has stated that the advantages of these features were well known. However, this is not a proper motivation to combines Kato with these features.

Indeed, applicants respectfully submit that, in making this rejection, the Examiner appears to be applying "impermissible hindsight vision afforded by the claimed invention," which is disallowed by MPEP § 2141.01(II). In establishing the motivation for a rejection under 35 U.S.C. § 103(a), "[t]he teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure." MPEP § 2142. Applicants respectfully submit that "[combining] prior art references without evidence of

such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability--the essence of hindsight." In re Dembiczak, 175 F.3d 994, 999 (Fed. Cir. 1999). Accordingly, applicants respectfully submit that the Examiner has failed to establish sufficient motivation for one of ordinary skill in the art to make the combination suggested by the Examiner.

Conclusion

The foregoing demonstrates that this application is patentable. Accordingly, reconsideration and allowance of this application are respectfully requested.

Respectfully submitted,
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